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ABSTRACT

In 1968, a project entitled "Accelerated Training Programs in Underprivileged Environments" attempted to investigate possibilities of preventive mental health techniques through early implementation of behavior modification procedures. The general objects of this project were: to alter the pre-school environment of children aged 0-5 from a culturally deprived welfare population in order to achieve behavior which is socially and economically compatible with that of American life; to work with the mothers of these pre-school children to increase their capacities to provide an emotionally stable home environment; to work with underprivileged high school and college youths in order to train them as teachers of the underprivileged; and, to work with children now in the public schools who are functioning academically at a level significantly lower than the grade level in which they are enrolled. In January 1969, a Child Development Center was established to fulfill the terms of the Project. Its program differed from programs such as Head Start. Children participated year-round in full-day sessions. Terminal behaviors were identified and then broken down into component parts which could be taught to children. A contingency management system was employed to facilitate a high success rate. (Authors/JM)

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KALAMAZOO

LEARNING VILLAGES

Early Education: A Preventive Mental Health Program[1]

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In many fields, the concept of prevention is not unusual. In medicine, immunization against diphtheria, pertussis, typhoid, polio, smallpox, and measles, along with regular physical examinations, is now routine procedure. Better lighting, wider roads, and clearer markings are only a few of the methods used in preventing highway accidents. Results of these and other preventive programs in various areas are obvious.

Techniques of prevention within the mental health field are at this time extremely limited. Simply stated, the conditions which produce problem behaviors must be identified and most importantly modified in such a way that they decrease the likelihood of their occurrence and favor their replacement with more appropriate behaviors. If, by the methods involved with behavioral engineering, it is possible to structure the environments of individuals so that the result is a population free from behavior problems, it legitimately can be said that prevention has taken place.

Just as the field of medicine begins immunization programs a few weeks after the birth of a child, so should the combined fields of mental health and education. By working with expectant mothers and newborn children, it may be possible to decrease the incidence of mental health problems in our society. As a society, we must begin immediately to establish educational centers for children shortly after they are born and work with them at this age. It then may be possible to provide them with the necessary skills which may be called upon later. In this manner, we could more effectively move toward the equality of opportunity for excellence that is now so obviously absent.

OVERALL PROJECT GOALS

In 1968 a project titled "Accelerated Training Programs in Underprivileged Environments" was funded by the Michigan Department of Mental Health in an attempt to investigate possibilities of preventive mental health techniques through early implementation of behavior modification procedures. The general objectives of this project were fourfold: (1) to alter the pre-school environment of children aged 0-5 from a culturally deprived welfare population in order to achieve behavior which is socially and economically compatible with that of American life; (2) to work with the mothers of these pre-school children to increase their capacities to provide an emotionally stable home environment; (3) to work with underprivileged high school and college youths in order to train them as teachers of the underprivileged; and (4) to work with children now in the public schools who are functioning academically at a level significantly lower than the grade level in which they are enrolled.

PRELIMINARY INVESTIGATION

An initial study (Wood, Ulrich and Fullmer, 1969) which investigated effects of accelerated education with pre-school children was conducted during the 1968-69 school year at Western Michigan University's Campus School. An experimental nursery operated in the afternoons using the same facilities that the Campus School nursery used in the mornings. The population of children was the same for both groups, mostly middle class children whose parents wanted them to have this experience. Four children in the experimental nursery, however, were added from other than middle class environments. Each group consisted of 20 children. The independent variables in this investigation were the teaching methods and the curriculum.

The Campus School nursery conducted a program which permitted its children to engage in available activities whenever they wished with the exception of nap and snack periods. The curriculum consisted of recreational and game activities not directly oriented toward specific goals. The philosophy was in accord with most ongoing nursery programs which assume that random exposure to various activities, in conjunction with peer and teacher interaction, will provide experiences which, in the long run, will benefit the child.

The program in the experimental nursery consisted of systematically teaching children specific skills as necessary prerequisites to behaviors which will be called upon later as they enter the public school system. In addition, the judicious use of positive reinforcement contingent upon appropriate behaviors was a critical variable in the experimental nursery.

At the termination of the nine month study, the Wechler Pre-School and Primary Scale of Intelligence and the Metropolitan Reading Readiness Tests were administered to both groups. The mean score on the Wechler for children enrolled in the Campus School nursery was 106 while the mean score for children enrolled in the experimental nursery was 116. The Campus School nursery's mean score on the Metropolitan Reading Readiness Test was at the 24.5th percentile while the mean score for children participating in the experimental nursery was at the 53.7th percentile. It should be noted that this particular evaluative instrument is typically administered to children entering the first grade, or roughly 18 months older than the children tested in this study.

INITIATION OF PROGRAM

In January 1969, the Child Development Center was established to fulfill the terms of the accelerated training project. The Center was initially housed in the Woodward Elementary School in Kalamazoo. Children from poverty homes (selected by social workers from the Michigan Department of Social Services) took part in the program which was concerned with teaching academic and social behaviors specific to school and societal success.

The Child Development Center differed from programs such as Head Start in a number of important ways. First, children in the program participated year around in full-day sessions. Second, terminal behaviors were identified and then broken down into component parts which could be taught to children. These behaviors were very specific rather than vague goals such as "development of self-concept, self-realization or awareness." Third, a contingency management system was employed to arrange the child's environment in such a manner that success occurred at a very high rate. When appropriate or correct behaviors occurred, the child was highly praised resulting in a continuing occurrence of those behaviors. When inappropriate behaviors occurred, the child was simply ignored—resulting in the elimination of those behaviors.

We were notified during the summer of 1969 that space in the Woodward Elementary School would not be available in the fall. Consequently, we moved the project from the school to a building located in the heart of the poverty area in Kalamazoo. We called our new facility the Downtown Learning Village. We continued to work with children from poverty backgrounds between the ages of two and one-half to five years of age. Currently 30 children are enrolled and by February of 1970, 45 children will be involved. In order to avoid continued segregation of the poor from the rest of society, approximately 20% of the children come from more affluent backgrounds and attend on a tuition basis. After the results of the project became visible, a sharp

increase in applications was noted from parents in wealthier districts in town wishing to enroll their children in the "school for the underprivileged."

Aside from the typical recreational and play activities found in most nurseries, approximately half the children's time is spent in different types of "fun" activities. These consist of formal classes in reading, language development, and math. Through the judicious use of reinforcement contingent upon appropriate behavior, each child is progressing through the educational program at his own pace. By working with three- and four-year olds, even for as short a period as four or five months, it was possible for these children to be functioning at the first grade level in language development, reading and math.

Several months after the project was initiated, it became apparent that even by working with three-year olds in an attempt to prevent behavioral problems, many of these children, even at that early age, were in need of remediation. It was obvious that many three-year olds from poverty backgrounds simply could not perform at the same level as three-year olds from middle and upper-middle class backgrounds. In several cases, three-year olds entered the program essentially nonverbal.

To cope with this problem, the East Main Learning Village was established which houses an infant day-care center and works with children from birth to two and one-half years of age. In this facility, infants are currently being taught many prerequisites to learning such as imitative behavior, being able to follow directions accurately, and being able to attend to a particular object or stimulus for an extended period of time.

In addition, this facility houses a private elementary school, established to follow up children who have been enrolled in the pre-school and are approaching kindergarten age. Plans are currently being formulated to compare methods used in the Learning Village schools with those in the Head Start and public school programs.

Slight problems occasionally arise at the Learning Villages which require special attention. Often the procedures employed to resolve these problem behaviors are designed and carried out by college students concerned with the experimental analysis of behavior. Typical of these situations are projects designed to (1) increase attending behaviors, (2) increase peer interaction, (3) organize lunch and play periods, and (4) eliminate disruptive behaviors.

Both the East Main and Downtown Learning Villages have parent advisory boards which play a critical role in the development and progress of the programs. Each board consists of five to seven parents of children currently enrolled in the program. In addition, this board is

responsible for insuring that parents of other children are continually informed of changes and the effect of these changes on their children. It is felt that a sensitive appreciation of the problems facing many of the parents is most necessary in development of the project.

TEENS AS PROGRAM AIDES

An inservice training course for high school youths who expressed an interest in the program, some of whom were from minority groups, was soon initiated (Arnett, Clark, Spates and Ulrich, 1969). The students initially enrolled were identified by two students who had shown a strong interest in changing poverty conditions. Because of the design of the course, the program was able to handle six students.

Part I was comprised of a series of ten, two-hour weekly class meetings set up similarly to a job in which a maximum of $5.00 per week was given for successful completion of class activities. A valise was given to each student containing a textbook, course objectives, a graph, and a description of the class structure. A set of objective questions was handed out each week which covered the following week's reading assignment. A graph was included to be used to record the number of hours spent working on the course during the week. The number of hours was not important in gaining pay. Pay was contingent only upon plotting a point each day. The objective of this procedure was to get the students to measure a personal behavior. Each week there was a ten question quiz which included only questions found in the objectives. It was worth a maximum of 20 points. Immediately following completion of the quiz, any one of the following procedures was instituted: either a film was shown, a guest speaker lectured, one of the instructors lectured, or small groups would be formed (two students per instructor) and past and future material reviewed and/or discussed.

The money was broken down initially as follows: Of the $5.00 possible each meeting, $3.25 was assured for attending (with a $.25 bonus for being on time), $.50 for keeping personal graphs up to date, and $1.00 for passing the quiz. The criteria for passing the quiz was 16 out of a possible 20 points. If the quiz was not passed, the student could still recover his dollar by taking the test home and writing out the correct answers to all ten questions. If done, the $1.00 would be given the student the following week.

Of the six high school students initially identified, three of these have enrolled at Western Michigan University anticipating entering the mental health field as psychologists.

APPLICATIONS IN A TRADITIONAL SETTING

In an attempt to work with children now in the public schools and who are functioning academically at a level significantly lower than the grade level in which they are enrolled, one portion of this project was conducted at the Hurd School in Kalamazoo (Boyle, Surratt, Ulrich and Wolfe, 1969). The Hurd School was instituted in September 1968 by the Kalamazoo Public Schools and was designed for students who had demonstrated an inability to adjust to regular school routine.

Two problems were initially identified which needed immediate remediation. One was the attendance frequency; the second problem concerned the time spent studying or paying attention to the teacher since much classroom time was spent in day dreaming and other incompatible behaviors.

A token economy was initiated in which each student could receive five coins for coming to school and two coins for every five minutes studying or paying attention to the teacher. They would always receive their coins from the teachers. In turn, these coins could be "cashed in" on items which the students selected as desirable items. In that most of them did not have lunches and did not have access to a food facility, a lunch program was high on the list. Lunches, which included sandwiches, soda pop, potato chips, and candy, could then be purchased for a predetermined amount of coins which the students in turn earned by coming to school and attending to ongoing class sessions.

It was initially observed that many students prior to our involvement in the program did not attend school but rather frequented a local Kalamazoo pool hall. After much discussion with Kalamazoo Public School officials concerning the ethical aspects involved, a pool table was brought into Hurd. It was now possible for these students to buy time on the pool table with the coins they earned by coming to school and for class performance.

Before inception of the program, attendance was only 63%. By initiating a token economy, this was raised to 79.8%. Although a significant increase did occur, this is still almost 10% below the Kalamazoo junior and senior high average. Prior to initiating the token economy at Hurd School, the student time spent studying was 67%. During the time these data were collected, it was observed that students studied as a result of aversive control which teachers imposed on them for not studying. After initiation of the token economy, studying time increased to 93.5%.

Among the educational supplies at Hurd School was an SRA Reading and Understanding series. Prior to our involvement, this teaching aid was *never* used by students. This series consisted of cards with a story on them which a student would read. At the end of the story,

there was a list of questions which the student would then answer. Under the rules of the token economy, a student would be given several tokens for answering all of the questions at the end of each exercise correctly. Within a three-month period, over 800 sets of these Reading for Understanding materials were used.

Although the Hurd School project produced some favorable results, it appears that programs designed to prevent behavioral problems by working with children at a very early age are by far the most economical in the long run, both in terms of monetary costs and human costs.

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1. This is the second of a three-part series on the Kalamazoo accelerated training project. The first paper appeared in the Fall, 1969, issue of the *Research Bulletin* under the title, "Accelerated Training Programs in Underprivileged Environments." The final portion will appear in the Spring, 1970, issue of the *Bulletin*.